

Work Order ID 165094

165094

Page 1

Tuesday, August 15, 2017 10:50:58 AM

Item ID: D117-762-041

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Replacement Skidtube

Start Date: 8/17/2017 Start Qty: 1.00

1

Cust Item ID:

Required Date: 8/29/2017 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

DAS
21
9-89

Date:

Tooling:

Date:

Run Start *NR1*

QC:

Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D3582

E

100

Document Control

0.00

100

DOCUMENT CONTROL

DC

Memo

0.00

Doc.Control -USB or Paperwork

Photocopy bluefile & type labels per PPP D117-762-041 CHG002

N/A

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Item ID: D117-762-041

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N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Replacement Skidtube

Start Date: 8/17/2017 Start Qty: 1.00

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Cust Item ID:

Required Date: 8/29/2017 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start

NR1

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

130

0.00

130

Skidtubes

Skidtubes

Skidtubes

Memo

1.02

1-Cut Aft end using DT8185

2-Deburr ends

3-Drill Aft Cap holes using DT8678 *** OPEN AFT CAP HOLE TO .187" ***

4-Locate DT 8973 from aft cap holes & Drill Ground wire hole on top of Tube.

5-Install 3/16 cleco in Ground wire hole ,then drill all X-Bolt holes using 3/16" drill.

6-Drill pilot holes for wearplates using DT8900

7-Open wearplate holes to Ø19/64" (0.297") as per Dwg D3582.

8-Drill holes for D5520-1 doubler using DT10309 A & B, locating from 4th and 5th crossbolt holes from aft using .1875 clekos. Spot drill tube using #20 drill (note 10). Remove DT10309 B. Re-install DT 10309 A drill thru tube and doubler using #20 drill (note 10), cleko as you go. Remove .1875 clekos and open holes in tube and doubler to 0.750". Remove doublers and identify orientation.

9-Deburr doubler and doubler holes in skid tube.

10-Countersink doubler holes in skid tube as per Dwg. detail J and note 12

11- open ground wear holes to 0.391" as per section B-B

12-Open Aft Cap holes using .209" drill.

BEIT 08-17

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Item ID: D117-762-041 Accept ***N900040100*** Setup Start ***NS1***
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 Item Name: Replacement Skidtube
 Start Date: 8/17/2017 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 8/29/2017 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

13-Drill pilot holes for section D-D and E-E. Holes must be laid out by hand. Mark out Center line and make sure that 6.65 and 5.906 measurements are respected. Double check before drilling, do not open holes to finish size.

12-Do not open holes of section G-G to finishes size.

DAS
03
9-89

-Tentative up abiding Con 5520-1

Daubler

BE17-08-18

140

0.00

140

Skidtubes

Skidtubes

Memo

0.38

Skidtubes

1-Weld fwd cap D2964 per dwg D3582 and QSI004

A/R AL ROD Batch:

M136158/M137033

2-Grind flush

1 8 BE17-08-18

150

QC10- Inspect visual per QSI004- ground welds

0.00

150

QC

Memo

0.00

Quality Control

1 *DAS 38 9-89*

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[illegible]

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Item ID: D117-762-041

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Stop ***NS2***

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Required Date: 8/29/2017 Req'd Qty: 1.00

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Reference:

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Run Start ***NR1***

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Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

190

0.00

190

Skidtubes

0.83

Skidtubes

Memo

***MASK OFF HOLES OF SECTION F-F (DO NOT C'SINK)

1-Open X-Bolt holes to finish size as per Dwg D3582, sections D-D, E-E, G-G as per Dwg.

2-Counter Sink X-BOLT holes as per Dwg D3582 D-D, E-E and G-G.***Do NOT countersink holes of section F-F).

3-Deburr and blow out chips from inside of tube, prep. tube for welding.

4-Install doublers using DT10309 B. Shave rivets as required.

5-Bond web as per Dwg D3582 & QSI 015

A/R 241 Sike Flex Batch: 137946
Exp Date: 10/03/29

6- Swage x-bolt spacer as per dwg and Section F-F QSI002.

7-Weld x-bolt spacers as per Dwg D3582 section D-D, E-E and G-G.

A/R AL ROD Batch: M136158

8-Grind welds flush

MBG 17/08/29

786 170830

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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
200	QC10- Inspect visual per QSI004- ground welds	0.00							
200									
QC	Memo	0.00							
Quality Control									
210	QC5- Inspect part completeness to step on W/O	0.00							
210									
QC	Memo	0.02							
Quality Control									
215	Pressure Wash per QSI005 4.3	0.00							
215									
HandFinish	Memo	0.49							
Hand Finishing	Touch-up alodine as per QSI								

DAS
9
9-89DAS
9
9-89(x1) *[Signature]* 20170815
BEB

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Item ID: D117-762-041 Accept ***N900040100*** Setup Start ***NS1***
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 Required Date: 8/29/2017 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
250	HandFinishing	0.00							
250	HandFinish								
Hand Finishing	Memo	1.55							
	1-Inspect for Foreign objects								
	2-Install Aft cap as per Dwg D3582, Detail "C"								
	A/R 241 Sika Flex Batch: <u>M137946</u>								
	Exp Date: <u>18/03</u>								
	3-Install Wearplates as per Dwg D3582 ,								
	Note:Install Bolt and washer on Ground Wire inserts on top of tube see								
	section D-D of dwg D3582								
	*****Do not install bolts where indicated on Dwg(Note #6)*****								
	A/R 241 Sika Flex Batch: <u>M137946</u>								
	Exp Date: <u>18/03</u>								
	4- Wing Walk as per Dwg D3582 and QSI 005 4.4								
260	QC5- Inspect part completeness to step on W/O	0.00							
260	QC								
Quality Control	Memo	0.02							

(X1)

✓

2017/09/07
BEB.

0 1709.03

DAS
9
9-89

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Start Date: 8/17/2017 Start Qty: 1.00

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Required Date: 8/29/2017 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
270		0.00							
270	Packaging					1		SmB	
Packaging	Memo	0.00						17/9/18	
Packaging	Identify and pack for shipping as per PPP D117-762-041 Location :FG081								
280	QC21- Final Inspection - Work Order Release	0.00							
280									
QC	Memo	0.10							
Quality Control									

DAS
21
9-89

SEP 11 2017

Picklist Print

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Page 1

Work Order ID: 165094

165094

Parent Item: D117-762-041

D117-762-041

Parent Item Name: Replacement Skidtube

Start Date: 8/17/2017

Required Date: 8/29/2017

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:A07.06.11New Issue EC
IPP Rev:B 08-02-22 change to revA as per dwg DD verF by:EC IPP REV:C
15.06.11 AS PER CHG002 DD VERF:JLM IPP REV:D 16.02.05
DWG REV.C (ecn16-514) DD VERF:JLM IPP REV:E 17.01.17 as per dwg
REV.D DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D5304-1		Manufactured	No			190	Each	20.0000	2	2			
---------	--	--------------	----	--	--	-----	------	---------	---	---	--	--	--

D5304-1

Crossbolt Spacer

**

BE 170830

Location

Loc Qty

Loc Code

LG001

20

145050

4

146516

1

161952

15

D5520-1		Manufactured	No			190	Each	0.0000	2	2			
---------	--	--------------	----	--	--	-----	------	--------	---	---	--	--	--

D5520-1

Doubler													
---------	--	--	--	--	--	--	--	--	--	--	--	--	--

CR3212-5-05

Purchased

190

Each

464.0000

68

68

CR3212-5-05

Rivet

**

BE 170816
B165 266 x 2 mag 17/08/16
mag 17/08/29

Location

Loc Qty

Loc Code

CCK003

300

m138238

300

LG

164

m138040

164

D3582-1-BENT		Manufactured	No			130	Each	4.0000	1	1			
--------------	--	--------------	----	--	--	-----	------	--------	---	---	--	--	--

D3582-1-BENT

Skidtube Assembly BK117

**

BE 170815

Location

Loc Qty

Loc Code

LG002

4

158024

4

Picklist Print

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Page 2

Work Order ID: 165094

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Parent Item: D117-762-041

D117-762-041

Parent Item Name: Replacement Skidtube

Start Date: 8/17/2017

Required Date: 8/29/2017

Start Qty: 1.00

Required Qty: 1.00

D2964

Manufactured No

140

Each

10.0000

1

1

**

BE 17-08-18
DEB

D2964

Cap

Location

Loc Qty

Loc Code

LG001

10

158161

4

163672

6

D2965

Manufactured No

250

Each

25.0000

1

1

**

2017/09/06 BEB.

D2965

Cap

Location

Loc Qty

Loc Code

FP001

25

127852

24

164860

1

D2971

Manufactured No

190

Each

28.0000

1

1

**

BE 17-08-30

D2971

Cross Bolt Spacer

Location

Loc Qty

Loc Code

LG001

28

155918

28

D3584-1

Manufactured No

190

Each

12.0000

1

1

**

MGB 17/08/29

D3584-1

Web

Location

Loc Qty

Loc Code

LG002

12

156826

4

163674

8

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Parent Item: D117-762-041

D117-762-041

Parent Item Name: Replacement Skidtube

Start Date: 8/17/2017

Required Date: 8/29/2017

Start Qty: 1.00

Required Qty: 1.00

D3662-3 Manufactured No 190 Each 58.0000 1 1

D3662-3

Crossbolt Spacer

**

BE170830

Location	Loc Qty	Loc Code
LG001	58	
105725	8	
71026	3	
81606	47	

D3662-1 Manufactured No 190 Each 62.0000 3 3

D3662-1

Crossbolt Spacer

**

BE170830

Location	Loc Qty	Loc Code
LG001	62	
163443	38	
163731	24	

ALS4-1032-130 AE4S4-1032-130 Purchased No 250 Each 5,504.000 36 36

AI S4-1032-130

Rivnut

**

20170906 BEB

Location	Loc Qty	Loc Code
FG	100	FG
M135442	50	
M136579	50	
FP001	5351	
M133077	3	
M136579	384	
M137820	4964	
st555	53	
M136579	53	

(x36)

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Work Order ID: 165094

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Parent Item: D117-762-041

D117-762-041

Parent Item Name: Replacement Skidtube

Start Date: 8/17/2017

Required Date: 8/29/2017

Start Qty: 1.00

Required Qty: 1.00

ALS4-428-165

Purchased

No

250

Each

61.0000

2

2

AI S4-428-165

INSERT

**

2017/09/06 BEB.

Location

Loc Qty

Loc Code

FG

10

117769

10

FP001

51

m136986

21

m137054

30

(X2)

D3508-3

Manufactured

No

250

Each

17.0000

1

1

D3508-3

Wearplate Fwd Center

**

2017/09/06 BEB.

Location

Loc Qty

Loc Code

FP002

17

162556

1

163358

6

163732

10

(X1)

D3508-9

Manufactured

No

250

Each

15.0000

1

1

D3508-9

Wearplate Fwd

**

2017/09/06 BEB.

Location

Loc Qty

Loc Code

FP002

15

155922

1

162544

2

163341

2

163738

10

(X1)

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Parent Item: D117-762-041

D117-762-041

Parent Item Name: Replacement Skidtube

Start Date: 8/17/2017

Required Date: 8/29/2017

Start Qty: 1.00

Required Qty: 1.00

D3558-3

Manufactured No

250

Each

4.0000

1

1

D3558-3

Gasket Center Fwd

**

2017/09/06 BEB

Location

Loc Qty

Loc Code

FG

1

89649

1

FP001

3

144377

3

D3558-9

Manufactured No

250

Each

7.0000

1

1

D3558-9

Gasket Fwd

**

2017/09/06 BEB

Location

Loc Qty

Loc Code

FG

1

80340

1

FP001

6

163534

6

D3558-11

Manufactured No

250

Each

4.0000

1

1

D3558-11

Gasket Aft Center

**

2017/09/06 / BEB

Location

Loc Qty

Loc Code

FG

1

80339

1

FP001

3

158572

3

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Parent Item: D117-762-041

D117-762-041

Parent Item Name: Replacement Skidtube

Start Date: 8/17/2017

Required Date: 8/29/2017

Start Qty: 1.00

Required Qty: 1.00

D3558-13

Manufactured No

250

Each

9.0000

1

1

D3558-13

Gasket Aft

**

2017/09/06 / BEB

Location

Loc Qty

Loc Code

FG

1

82380

1

FP001

8

157515

8

D3508-11

Manufactured No

250

Each

8.0000

1

1

D3508-11

Wearplate Aft Center

**

2017/09/06 BEB

Location

Loc Qty

Loc Code

FP002

8

155905

1

158148

1

163273

6

D3508-13

Manufactured No

250

Each

8.0000

1

1

D3508-13

Wearplate Aft

**

2017/09/06 BEB

Location

Loc Qty

Loc Code

FP001

8

163740

8

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Parent Item: D117-762-041

D117-762-041

Parent Item Name: Replacement Skidtube

Start Date: 8/17/2017

Required Date: 8/29/2017

Start Qty: 1.00

Required Qty: 1.00

NAS1149D0332J

Purchased

No

250

Each

2,017.000

2

2

NAS1149D0332.J

**

2017/08/09/06 BEB

Washer

Location

Loc Qty

Loc Code

FP

141

m137075

141

GA

200

m136643

200

ST260a

1000

m138238

1000

ST264

676

m137736

5

m137963

671

(x2)

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Parent Item Name: Replacement Skidtube

Start Date: 8/17/2017

Required Date: 8/29/2017

Start Qty: 1.00

Required Qty: 1.00

AN3C4A

Purchased

No

250

Each

1,614.000

28

28

AN3C4A

Bolt

**

2017 109106 BEB

Location

Loc Qty

Loc Code

FG

* M137587
122814

20

20

FP001

121

M136450

23

M136740

8

M136986

20

M137075

43

M137164

2

M137361

2

M137820

23

OVER002

1075

M137507

150

M137587

250

M137963

400

M138040

125

M138209

150

ST350

398

M135704

2

M138238

396

(x28)

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D117-762-041

Parent Item Name: Replacement Skidtube

Start Date: 8/17/2017

Required Date: 8/29/2017

Start Qty: 1.00

Required Qty: 1.00

AN3C5A

Purchased

No

250

Each

923.0000

2

2

AN3C5A

Bolt

**

201709106 / BEB.

Location

Loc Qty

Loc Code

FG

5

122800

5

FP001

61

M137361

61

OVER002

800

M137710

200

M137963

600

ST350

57

M135442

57

NAS1149D0416J

Purchased

No

250

Each

3,394.000

2

2

NAS1149D0416.J

WASHER

**

SP A-9-6.

Location

Loc Qty

Loc Code

GA

568

m131511

568

ST264

2826

m131511

2826

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Parent Item: D117-762-041

D117-762-041

Parent Item Name: Replacement Skidtube

Start Date: 8/17/2017

Required Date: 8/29/2017

Start Qty: 1.00

Required Qty: 1.00

NAS1149C0332R

Purchased

No

250

Each

5,224.000

28

28

NAS1149C0332R

WASHER

**

2017/09/06 BEB

Location

Loc Qty

Loc Code

FP001

3236

m137851

1946

m137951

290

m138237

1000

GA

482

m133284

22

m136444

460

ST260a

1000

m138207

1000

ST266

506

m137381

506

AN4-4A

Purchased

No

250

Each

36.0000

2

2

AN4-4A

BOLT

**

SP17-9-6

Location

Loc Qty

Loc Code

ST344

20

m138207

20

ST346

16

m137061

16

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Shop Packet Print

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ITEM	Qty -041	Part Number	Description
	X	D3582-041	SKIDTUBE ASSEMBLY
1	1	D2962-150	EXTRUSION
2	1	D2964	CAP
3	1	D2965	CAP
4	1	D2971	CROSS BOLT SPACER
5	1	D3508-3	WEARPLATE
6	1	D3508-9	WEARPLATE
7	1	D3508-11	WEARPLATE
8	1	D3508-13	WEARPLATE
9	1	D3558-3	GASKET
10	1	D3558-9	GASKET
11	1	D3558-11	GASKET
12	1	D3558-13	GASKET
13	1	D3584-1	WEB
14	3	D3682-1	CROSS BOLT SPACER
15	1	D3682-3	CROSS BOLT SPACER
16	2	D5304-1	CROSS BOLT SPACER
17	2	D5520-1	DOUBLER
18	28	AN3C4A	BOLT
19	2	AN3-5A	BOLT
20	2	AN4-4A	BOLT
21	28	NAS1149C0332R	WASHER (AN960C10L)
22	2	NAS1149D0332J	WASHER (AN960JD10L)
23	2	NAS1149D0416J	WASHER (AN960JD416L)
24	36	AELS-1032-130	INSERT
25	2	ALS7-428-165	INSERT
26	68	CR3212-5-05	CSK RIVET, CHERRY MAX

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION COAT PER QSI 005 4.1 PRIOR TO INSERTING D3584-1 WEB. POWDER COAT ASSEMBLY GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3. ANTI-SKID PAINT AS INDICATED TO 1.00 ABOVE CENTER LINE PER DART QSI 005 4.4
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 18.2 lbs
- 8) WELDING: PER DART QSI 004.
- 9) INSERT D3584-1 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/-291 ADHESIVE PER DART QSI 015 AFTER BENDING.
- 10) USE DART DRILL TEMPLATE DT8900 TO LOCATE AND DRILL Ø0.297 HOLES (36 PLACES) FOR WEARSHOE INSERTS. INSTALL AELS-1032-130 PER SECTION G-G (36 PLACES) AFTER FINISH. SEAL WEARPLATE BOLTS WITH SIKAFLEX-241/-291.
- 11) DO NOT INSTALL AN3C4A BOLTS AND NAS1149C0332R WASHERS IN INDICATED LOCATIONS
- 12) LOCATE QTY (34) HOLES ONTO THE SKIDTUBE PER D5520-1 DOUBLER AND DRILL Ø0.161 THRU SKIDTUBE AND DOUBLER USING DT10309. COUNTERSINK Ø0.286 x 100° (34 PL) PER DOUBLER AND INSTALL EACH D5520-1 DOUBLER USING QTY (34) CR3212-5-05 CSK RIVETS.

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WITHOUT NOTICE
WORK ORDER

NO. 165094MCS
1208-75

RELEASED
2017-08-11
KEN 17-547

E	MOVE VIEWS FROM SHT 1 TO SHT 2. ADD ITEMS 17 & 26 AND NOTE 12-13. Ø0.187 HOLE WAS Ø0.75. ADD SHT 3, ADD DETAIL J. SECTION F-F ADD D5520-1. SCALE ON VIEWS WAS 3X.	AJS	17.03.27
D	D5304-1 WAS D2973; REVISE BOM & SECTION F-F & SECTION NOTES (ZN B7-3, A8-3); REF NCR16-6160	RF	17.01.09
C	D3492 PLUG ASSEMBLIES REMOVED. REFORMAT NOTES SHT 1	AP	15.11.02
B	29.86 WAS 29.87 (ZN C2-1), INCORPORATED DEO D3582-A-1 (ZN D5-1), FORMAT TO CURRENT STD	RF	15.02.20
A	NEW ISSUE	PH	07.06.08
REV.	DESCRIPTION	BY	DATE
DESIGN	PH	DART AEROSPACE USA, INC EUGENE, OR	
DRAWN	AJS		
CHECKED		DRAWING NO.	REV. E
MFG. APPR.		D3582	SHEET 1 OF 4
APPROVED		TITLE	SCALE
DE APPR.	#	BK 117 SKIDTUBE ASSEMBLY	NTS
DATE	17.03.27	COPYRIGHT © 2007 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

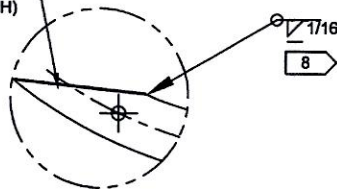
QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
							Completed By		
							Lead hand / Supervisor Approval Verification		
							QC / QA Coordinator Approval		

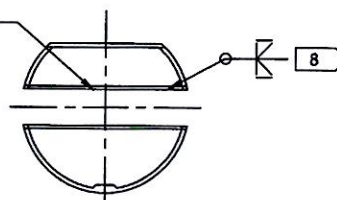
Root Cause				FAULT CATEGORY			
Environment ☐	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐
Design ☐	☐	Operator	☐	Bending	☐	Set-up	☐
Doc/Data ☐	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐
Equip/Tooling ☐	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐
Handling/Pre ☐	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐
Material ☐	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐
Internal Transport ☐	☐	Poor Information	☐	Crushing	☐	Countersink	☐
Tribal Knowledge ☐	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐
LOA ☐	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐
Substation ☐	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐
Past Expiry Date ☐	☐	Manufacturing Process	☐	OTHER : _____			
Misidentified ☐	☐	Past Due	☐				

D2964 CAP
(GRIND FLUSH)



DETAIL C
SCALE 4X

D2971 SPACER



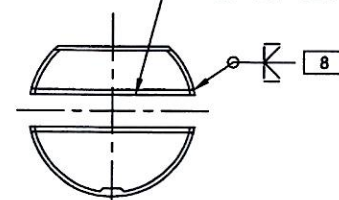
SECTION D-D
SCALE 4X

SECTION D-D NOTES

AFTER BENDING AND DRILLING ASSEMBLY
PERFORM THE FOLLOWING:

1. CHAMFER HOLE 0.030 x 45°
2. INSERT D2971 SPACER
3. WELD INTO PLACE AND GRIND FLUSH
4. PASS Ø0.750 DRILL TO REMOVE SPILL OVER

D3662-3 SPACER



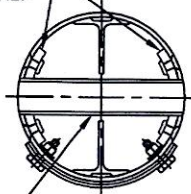
SECTION E-E
SCALE 4X

SECTION E-E NOTES

AFTER BENDING AND DRILLING ASSEMBLY
PERFORM THE FOLLOWING:

1. CHAMFER HOLE 0.030 x 45°
2. INSERT D3662-3 SPACER
3. WELD INTO PLACE AND GRIND FLUSH
4. PASS Ø0.672 DRILL TO REMOVE SPILL OVER

D5520-1 DOUBLER
REF



SECTION F-F
SCALE 4X
2 PL

SECTION F-F NOTES

AFTER BENDING AND DRILLING ASSY
PERFORM THE FOLLOWING:

1. INSERT D5304-1 SPACER
2. SWAGE TO Ø0.565 +0.005/-0.000 X 1.0
DEEP PER QSI 002
3. OPEN THRU HOLE TO Ø0.625
4. GRIND FLUSH

D3584-1 WEB
REF

D3662-1 SPACER
3 PL

10 AFTER FINISH, INSTALL
AELS-1032-130
INSERT 36 PL

AN3C4A BOLT (1)
NAS1149C0332R WASHER (1)
28 PL

10

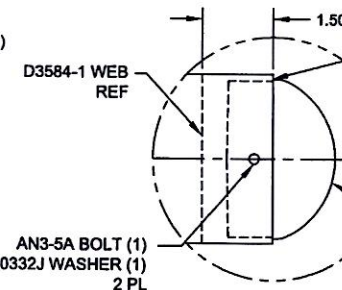
SECTION G-G
SCALE 4X

SECTION G-G NOTES

AFTER BENDING AND DRILLING ASSEMBLY
PERFORM THE FOLLOWING:

1. CHAMFER HOLE 0.030 x 45°
2. INSERT D3662-1 SPACER (3 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. PASS Ø0.515 DRILL TO REMOVE SPILL OVER

AFTER FINISH, INSTALL
ALS7-428-165 INSERT (1)
AN4-4A BOLT (1)
NAS1149D0416J WASHER (1)
2 PL



DETAIL H
SCALE 4X

SEAL WITH
SIKAFLEX -241/-291

AN3-5A BOLT (1)
NAS1149D0332J WASHER (1)
2 PL

D2965 CAP

DESIGN	PH	DART AEROSPACE USA, INC EUGENE, OR	
DRAWN	AJS		
CHECKED		DRAWING NO.	REV. E
MFG. APPR.		D3582	SHEET 3 OF 4
APPROVED		TITLE	SCALE
DE APPR.		BK 117 SKIDTUBE ASSEMBLY	NTS
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2017-08-11

DQA: _____ Date: _____

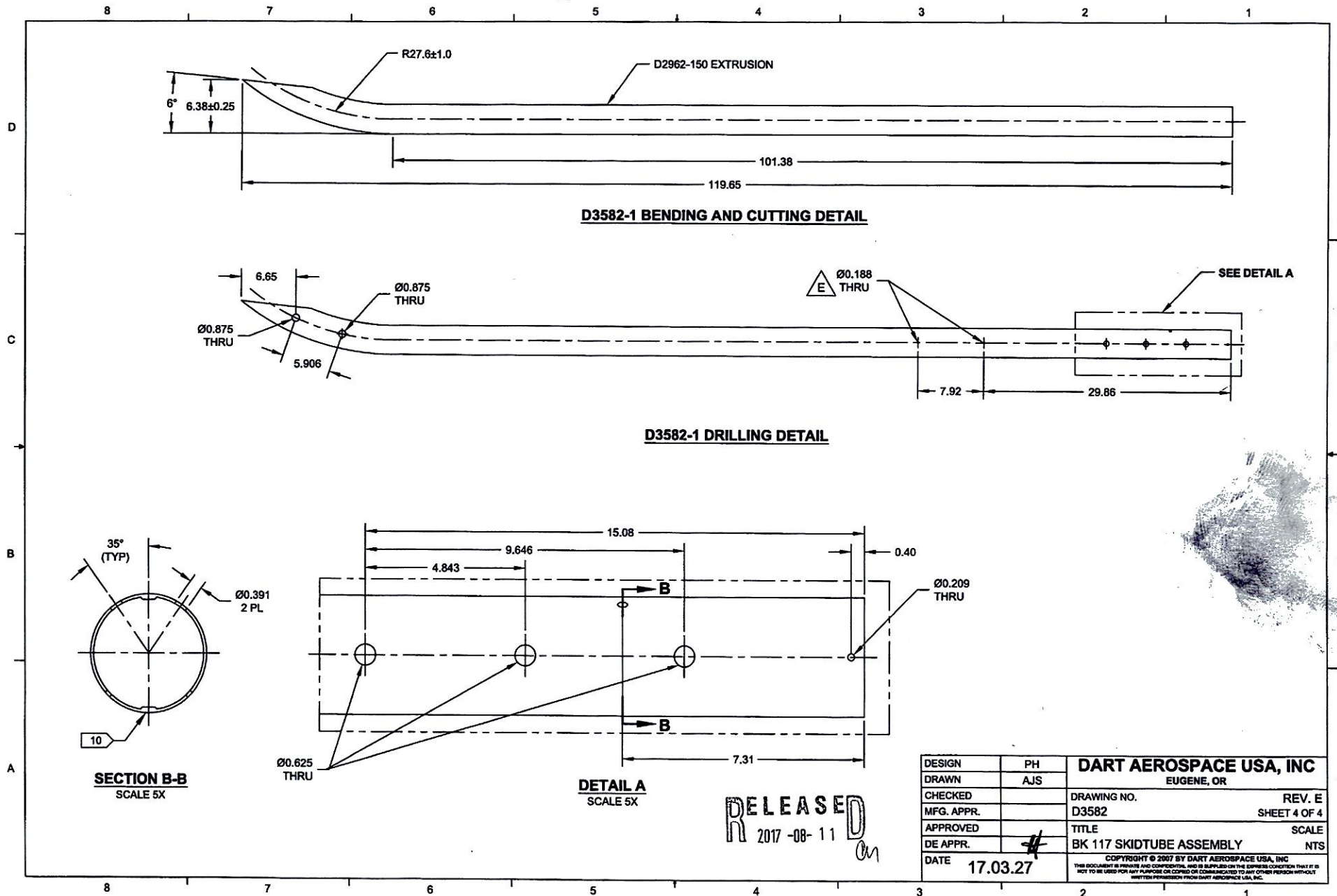


WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : ☐					



DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐				
OTHER : _____									